2006 SIXTH CIRCUIT JUDICIAL CONFERENCE

Thursday, May 18, 2006

"The Law, the Courts, and the
Future of the
American Automobile Industry."

CENTER FOR AUTOMOTIVE RESEARCH

Future Auto World; Round or Flat?

David E. Cole
Chairman
Center for Automotive Research (CAR)

66th Conference
Sixth Judicial Circuit

Detroit, Michigan

May 18, 2006

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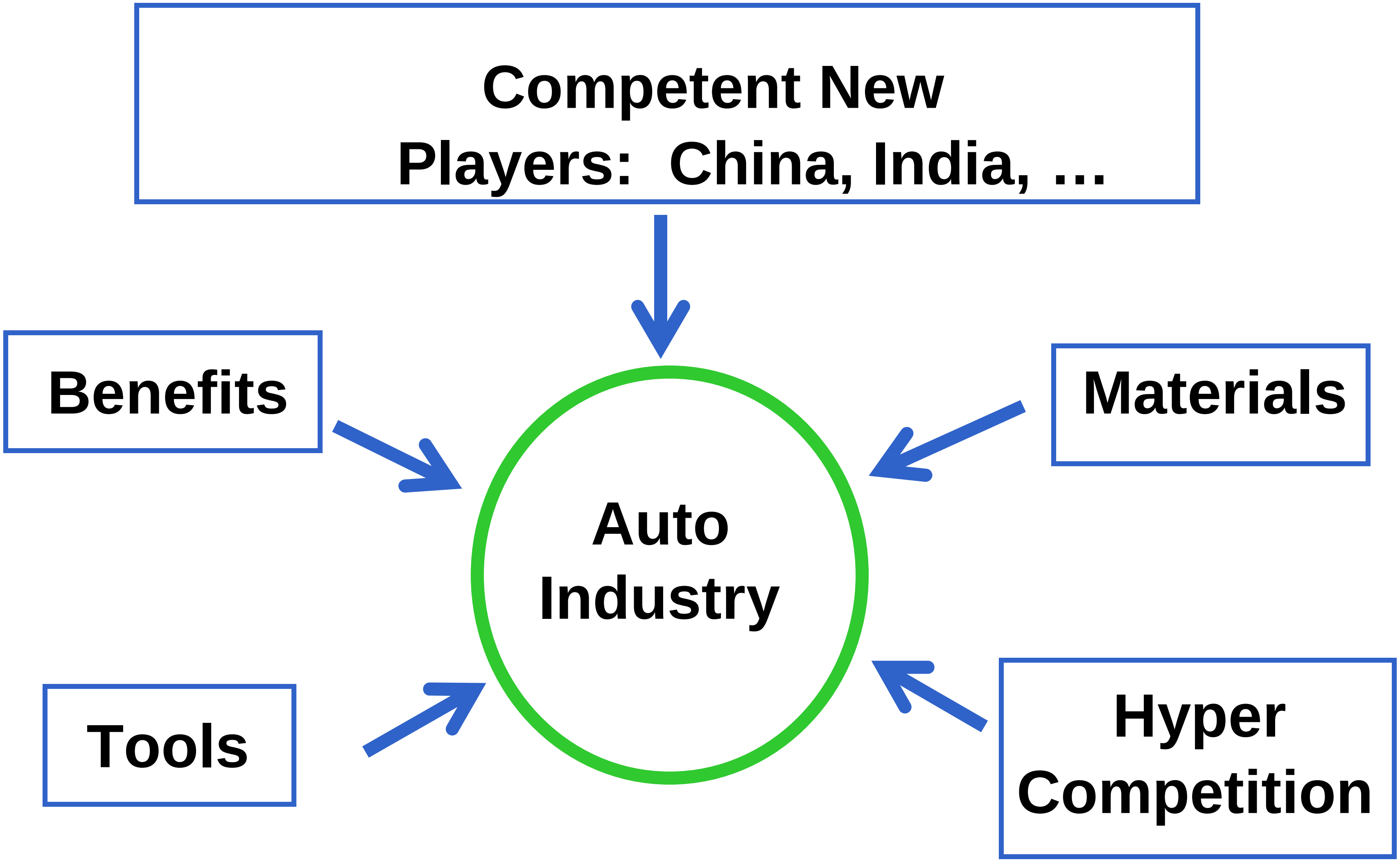
The Perfect Storm



Auto Industry of the Future

A World of

Vanishing Boundaries

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Demographics

"Boomers go Boom"

- Consumer Behavior
- Socio / Political
- Health Care
- Skilled Workers
- World Issue

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Auto Industry—Like Pro Football

Everyone is Fast and Hits Hard

Excellent Players-

- TAM's – Traditional American Manufacturers
- NAM's – New American Manufacturers

Competition

Relentless

Unforgiving

Domestic Manufacturers

Face $2,000 - $ 2,500

Cost Penalty

Domestic Industry

Difficult Times But Survivable

- GM
- Ford
- DaimlerChrysler
- Delphi
- Visteon
- Traditional Suppliers

U.S. Auto Legacy Ratios – End of 2005

	GM	Chrysler Group
Active:		
Salaried Non-Union	43,534	14,323
Hourly	113,152	54,466
Total	156,686	68,271
Retired:		
Salaried Non-Union	116,000	20,916
Hourly	342,400	83,170
Total	458,400	104,086
Ratio (Retiree/Act.))	2.93	1.52

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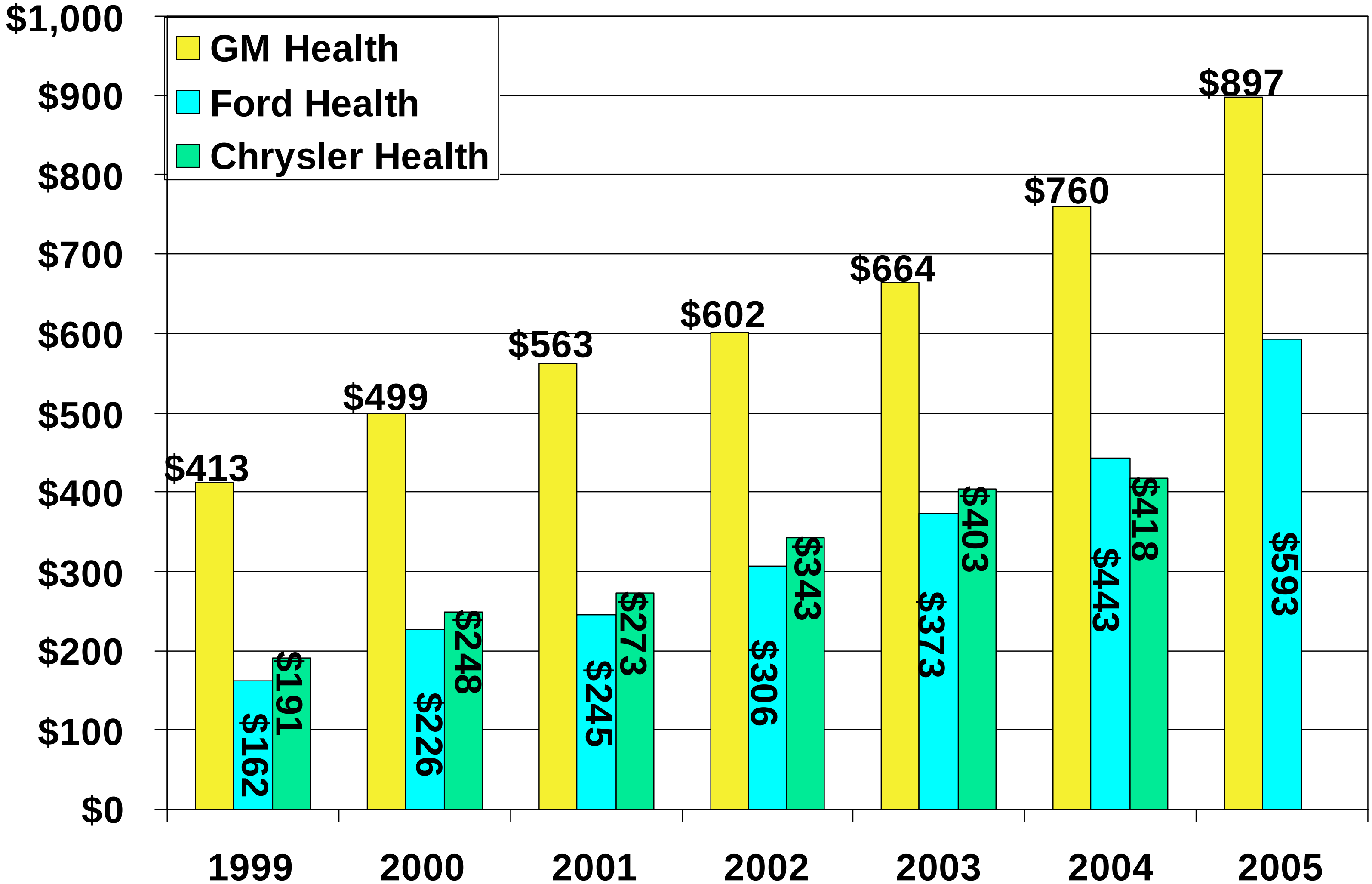
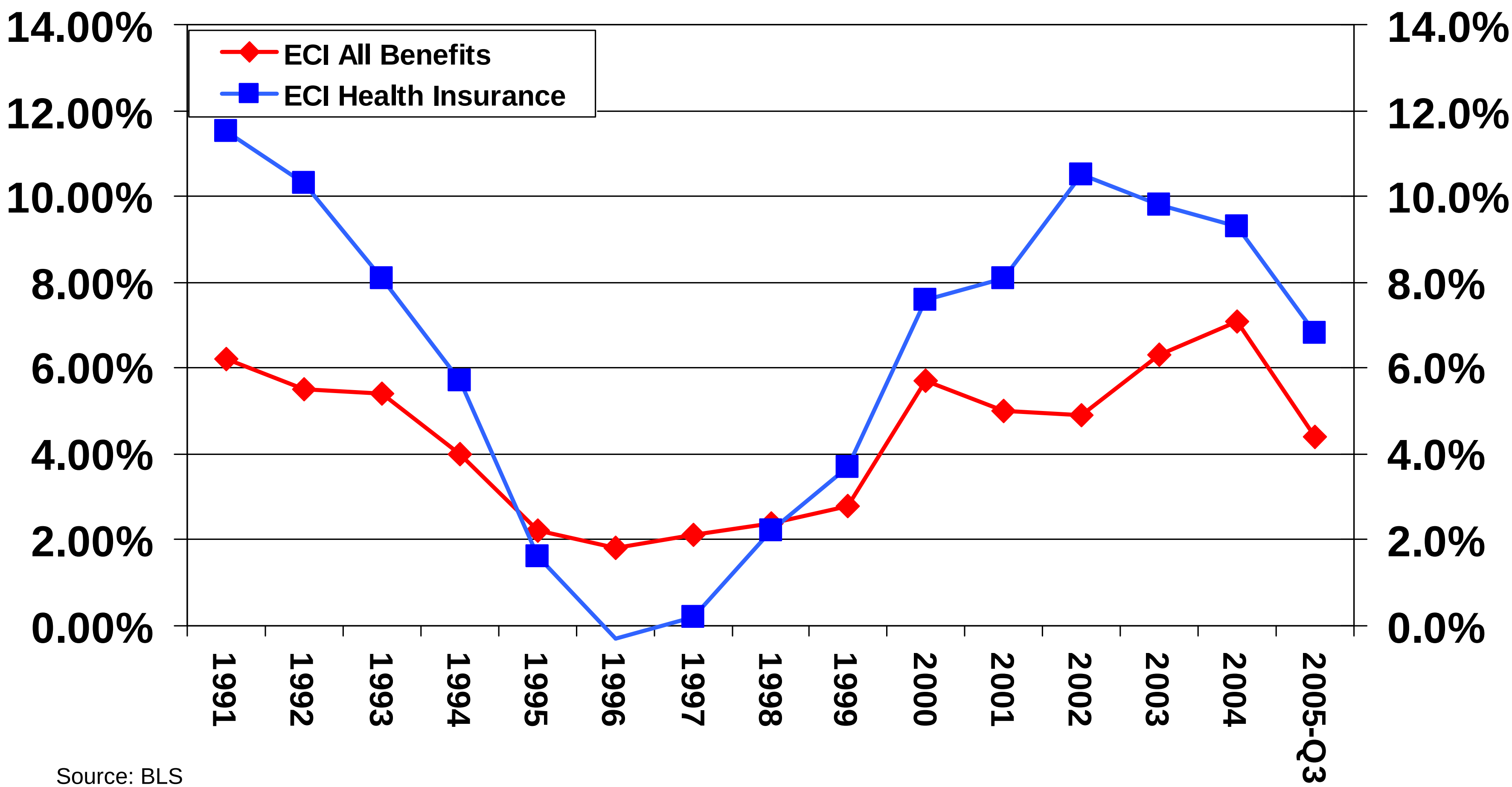
Health Legacy Cost per North American Vehicle Produced Thru 2005



Health Cost Inflation

Employment Cost Index 1991 to 2005
ECI Private Industry Costs per Hour



Source: BLS

Industry, Highly Unstable —

Not in Final Form

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There is Good News & Bad News:

We Have a Crisis

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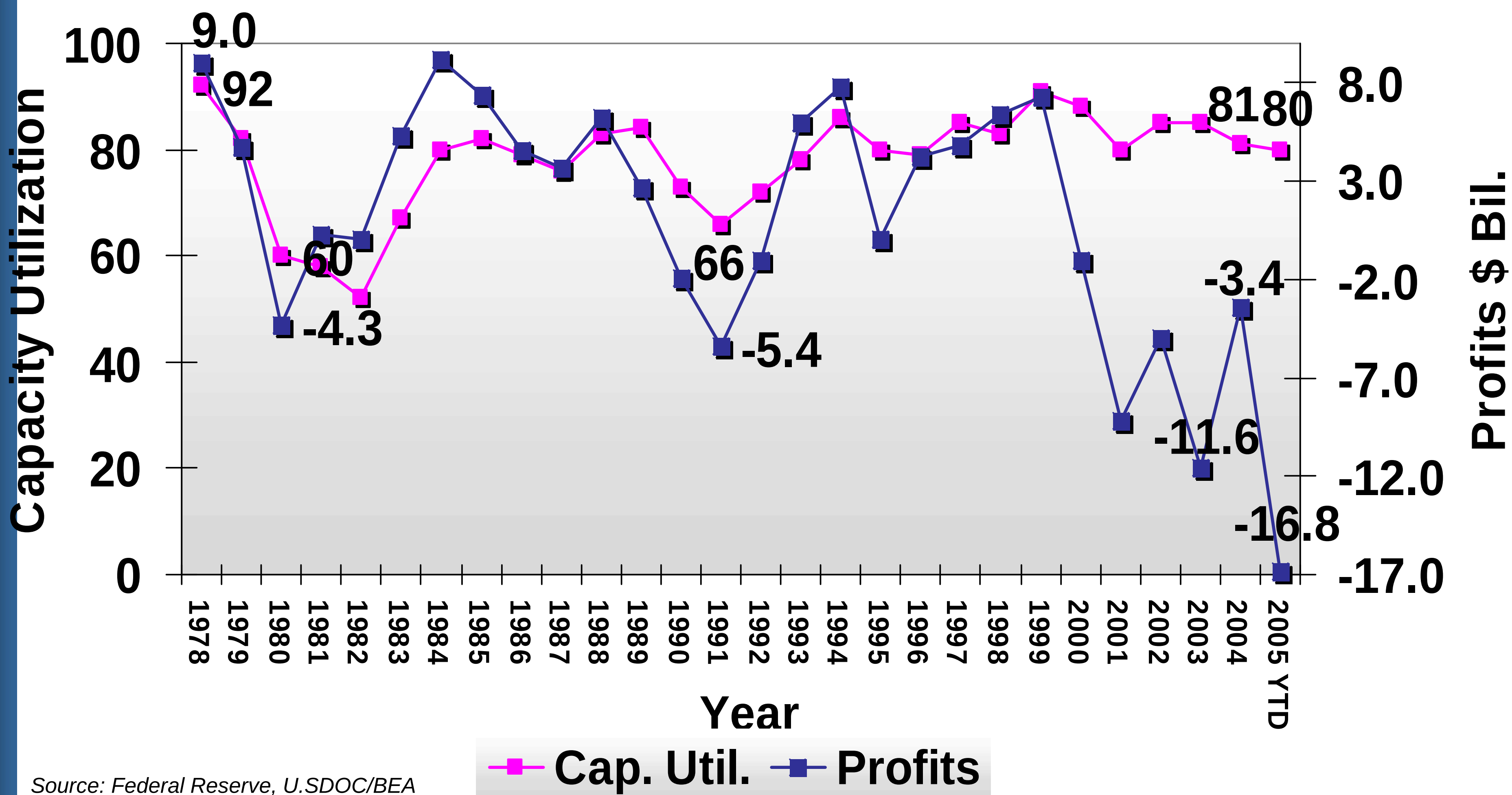
U.S. Automotive Industry Capacity Utilization and Profits 1978 – 2005



Source: Federal Reserve, U.SDOC/BEA

The Old Business Model

is Broken

It’s Change or Die &

Shrink to Grow

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Auto Industry 2007

- Successful manufacturers and suppliers
- Strong market
- Great products
- But—not everyone made it

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The Future —

It’s not what it used to be

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Economic Contribution of the U.S. Automotive Industry

- Manufacturing
- Retail

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Auto Manufacturing

Manufacturers . . . . 500,000 + jobs

Suppliers . . . . 1,800,000 + jobs

R & D Spending . . . $18+ billion

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Economic Contribution Per Job

Auto Mfr.	$292,000
Average Job	$ 73,500
Average Mfg.	$120,000

Economic Multiplier

Auto Manufacturers – 7.5

New Vehicle Dealers – 2.5

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Foundation for Excellence

- Smarter Industry
- Platform / Component Set Rationalization
- Faster, Better Product Development
- Manufacturing Flexibility
- Stronger Processes
- Discipline
- Supplier Competence
- Lean Everything

Market Share is Nice

Profits are Essential

Future Profits

- Price Increase
- Market Share
- Cost Reduction

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Cost Reduction — Survival Issue

- Low Investment
- Subsystem Optimization
- Global Sourcing
- Flexible, Lean Manufacturing
- Fast Product Development
- High Volume Platforms and Component Sets

Business Model

Keys to Success:

- Effectiveness
- Efficiency
- Value

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Vertical Integration

Talk

Paper

Bureaucracy

Linear

Slow

Old Business Model

Lean

Physical Prototypes

Control

Legalistic

Sequential

Individual

Job for Life

Regional

Kings

Competition

Acquisitions

Structured

Virtual Integration

Listen

Paperless

Anti-bureaucracy

Collaboration

Fast

New Business Model

Lean

Agile

Virtual Prototypes

Empowerment

Trust

Team

e-enabled

Parallel

People Flow

Coaches

Global

Coopetition

Alliances

Flexible

New Business Model

- Auto Industry
- Industry
- Education
- Health Care
- Government

Examples: New Business Model

- Ford/GM Transmission Collaboration
- GM – DCX – BMW Hybrid Collaboration
- DCX – Toledo Plant
- GM Body Tooling
- Tool and Die Consortia
- Toyota Reinvention

Old Labor/Mgt Model

Is Obsolete

Confrontation → Collaboration

Knowledge:
The Competitive Edge

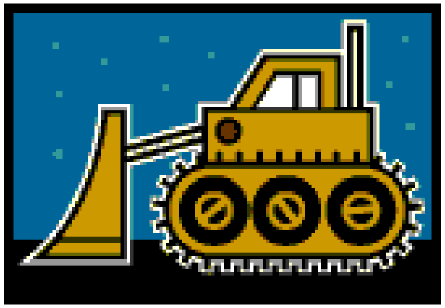
- Creativity
- Innovation
- Value

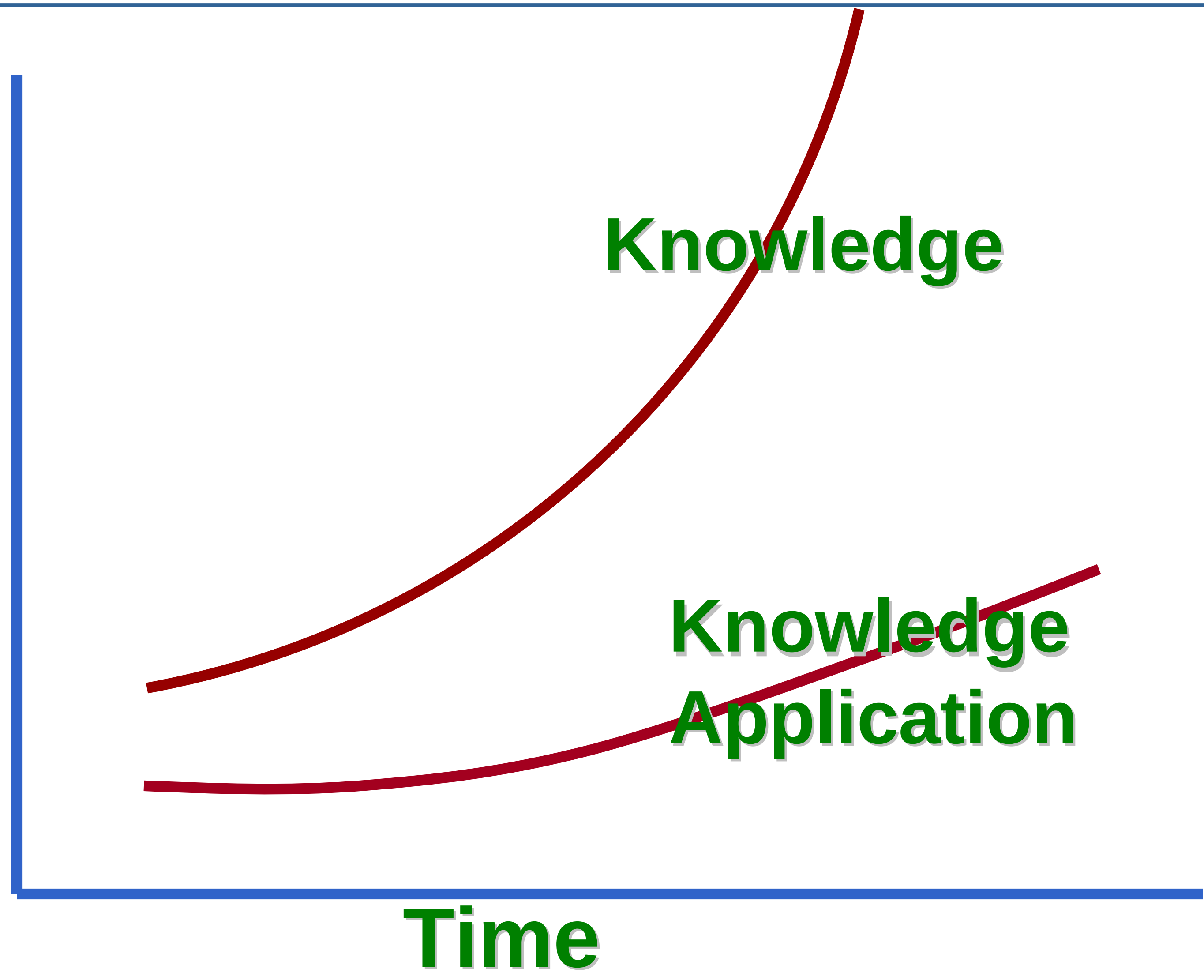
Customer Pull

Cars and Trucks

Technology Push

Product and Process




Knowledge
Knowledge Application
Time

Fast-paced change demands leverage of all resources

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Communication

Collaboration

Cooperation

Alliances

Teamwork

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Change is Tough

Not Changing is Tougher

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It's All About People…

Relationships Are Important

Product Technology

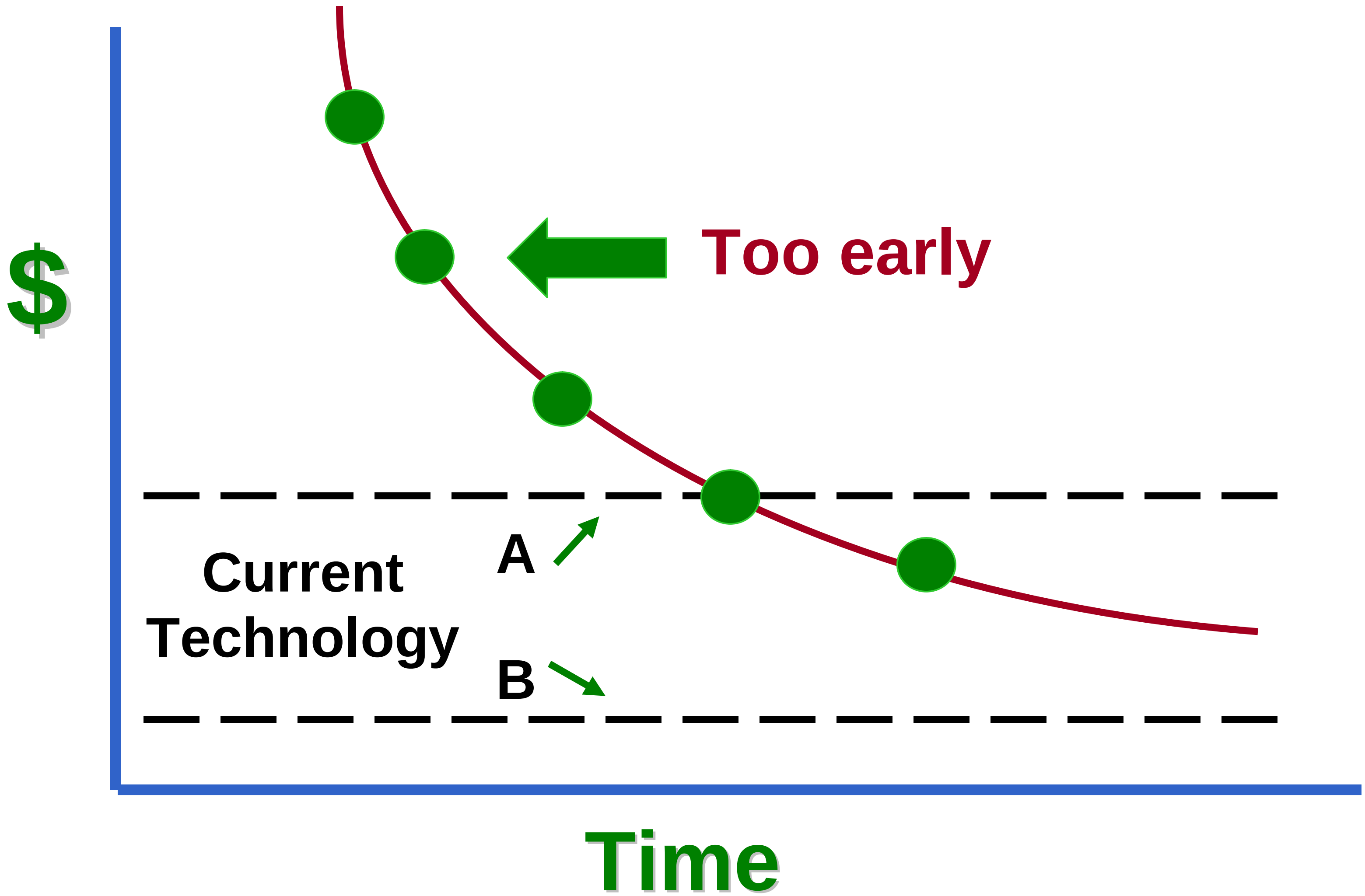
At the edge of a revolution?

Future Power Plants

- ***Gasoline***
- ***Diesel***
- ***Hybrid***

The Answer – ?

Technological Progress—When to Commercialize



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Electrical / Electronic Content

	Current	2009
Total Combined E/E	20	31.5
Electronic Content	10	20

Future Direction

It's All a Matter of Economics

Auto World — 2006+

- A Few Big Dogs
- Consolidation Continues
- Subsystem Optimization
- Super Suppliers – Tiers 1 & 2
- Lean — Agile
- Fast, Smart, Rich, Global
- Technology Revolution

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World Class

is a Moving Target